



Somalia Water & Land Information Management

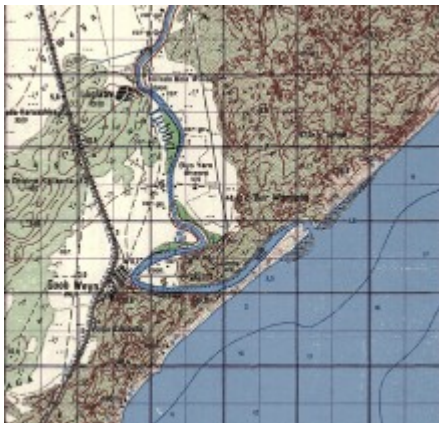
## Potentialities and Limitations in the Use of Remote Sensing for Detecting and Monitoring Environmental Change in the Horn of Africa

*Expert Workshop*

12<sup>th</sup> -13<sup>th</sup> June 2007

Holiday Inn Nairobi, Kenya

### SECOND CIRCULAR



Topographic sheet of Jubba river mouth (1970)



Landsat ETM of Jubba river mouth (17/11/2001)



Inundation risk, historical & current floods (1997, 2002 and 2006)

### INTRODUCTION

Over the past decade different remote sensing applications have been developed for **environmental change monitoring and modelling**, for instance analysis of climate change, carbon stocks, land cover dynamics, hydrological modelling, landform evolution, etc. However, while remote sensing opens up a wide new range of study and monitoring tools, **it is not a cure-all**, and care must be taken to **use it for appropriate purposes in a cost-effective way**.

It is in this spirit that SWALIM has taken the initiative to organize this workshop, with the hope that the results may later guide its future activities related to remote sensing, and that the same desire will be shared by the invited institutions.

The main focus of this workshop will be on the presentation of **real case studies and theoretical advancements** relating to the potentials and limitations **in the use of remote sensing** as a tool for assessing environmental change. It is foreseen that a combination of pragmatic and theoretical perspectives on the roles of remote sensing will assist institutions working on environmental issues in the Horn of Africa in raising awareness of the most efficient, effective and cost-effective ways to exploit this powerful tool.

Please check the workshop website for updates, under *News & Announcement* at <http://www.faoswalim.org/>

## AIMS

To assess the potentialities and limitations of the use of remote sensing for mapping, monitoring and modelling environmental change in the Horn of Africa (HoA), through sharing of different user experiences.

## PARTICIPANTS

Participation is intended mainly for **researchers employing Remote Sensing** for environmental analysis **in the context of the Horn of Africa**. The principal institutions working in this field include : FAO, UNEP, JRC, ILRI, ICRAF, FSAU, UNOSAT, UN Habitat, UNICEF, UNESCO, ICPAC-IGAD, FEWS NET, RCMRD, DRSRS, KARI, KFRI, University of Nairobi, and other academic institutions International NGOs and any others using or interested in the use of Remote Sensing in this region.

## WORKSHOP THEMES

Three themes will be presented by the workshop (Sessions 1 to 3), the aims of which will be to bring together various experiences on the use of Remote Sensing for specific themes within the HoA environment.

The last session (Session 4) will be an open Final Discussion on topics presented in Session 1-3. All sessions will be professionally chaired, and the workshop language will be English.

- **Session 1 - Resource-base inventories**: mapping of topography, geology, landform, soils, land cover, vegetation, land use, hydrology, climatology, etc.
- **Session 2 - Assessing environmental change**: detecting changes in land cover, land use, soil properties and water resources, and assessing the extent and magnitude of drought, flooding, landslide evolution, river evolution, etc.
- **Session 3 - Process modelling**: modelling land degradation, soil/river/coastal erosion, hydrology, long and short term weather forecasting, etc.
- **Session 4 - Discussion**: extensive discussion session for exchanging views, identifying synergies and links, develop a number of technical recommendations and suggestions .

At the end of Sessions 1, 2 and 3 the chairmen will prepare and present to the public a Session summary, highlighting the main hot points coming out from the presentations (15 minutes).

Even though some questions are asked after each presentation, the participants are invited to prepare some questions to the final session and we hope that all the presenters are taking part in that.

During the last Session 4 there will be a plenary discussions about the results of sessions 1, 2, and 3, and then concluding remarks resulting from the contribution of all expert participants.

## REGISTRATION

A desk for registration will be present at the entrance of the conference room. All participants are kindly ask to pass to this desk to receive their welcome package and to check their details for further communication.

For any further organization enquires please refer to the registration desk and personnel.

## SOCIAL DINNER

On the first day (12<sup>th</sup> of June) at 19:30 a social dinner will be offered by the organizers to all the participants at the same venue of the workshop (Holiday Inn). We wish you all can enjoy this opportunity.

## FINAL PROGRAMME

Date	Time	Title of the Session	Chair
DAY 1 12/06/2007	8:00	<b>Registration to the workshop</b>	
	8:30	<b>Opening of the workshop</b>	<b>Ms. Paula Vazquez-Horyaans</b> (EC)
	8:40	<b>Technical notes on the workshop's programme</b>	<b>Dr. Zoltan Balint</b> (FAO SWALIM)
	8:50	<b>Keynote speech</b> "Challenges in land cover and land use change detection in East Africa"	<b>Prof. Petri Pellikka</b> (Helsinki Univ)
	9:30	<b>Session 1 – Resource Base Inventory</b>	<b>Dr. Wilber Ottichilo</b> (RCMRD)
	10:30	<i>Coffee break</i>	
	11:00	<b>Session 1 – Resource Base Inventory</b>	<b>Dr. Wilber Ottichilo</b> (RCMRD)
	13:00	<b>Session 1 – Session summary</b>	
	13:15	<i>Lunch break</i>	
	14:15	<b>Session 2 – Assessing Environmental Change</b>	<b>Mr. John Latham</b> (FAO)
	15:35	<i>Coffee break</i>	
	16:00	<b>Session 2 – Assessing Environmental Change</b>	<b>Mr. John Latham</b> (FAO)
	17:40	<b>Session 2 – Session summary</b>	
	19:30	Social dinner	
DAY 2 13/07/2007	8:30	<b>Session 3 – Process modelling</b>	<b>Dr. Arwyn Jones</b> (JRC)
	9:50	<i>Coffee break</i>	
	10:20	<b>Session 3 – Process modelling</b>	<b>Dr. Arwyn Jones</b> (JRC)
	12:20	<b>Session 3 – Session summary</b>	
	12:35	<i>Lunch break</i>	
	13:30	<b>Session 4 – Discussion &amp; Conclusions</b>	<b>Prof. Petri Pellikka</b> (Helsinki Univ)
	15:30	<i>Coffee break</i>	
	16:00	<b>Session 4 – Discussion &amp; Conclusions</b>	<b>Prof. Petri Pellikka</b> (Helsinki Univ)
	17:00	<b>Session 4 – Conclusions</b>	
	17:20	<b>Final remarks and conclusion of the workshop</b>	<b>Dr. Graham Farmer</b> (FAO O.i.C for Somalia)

**The complete list of presentation is posted at the end of this second circular**

### ORAL PRESENTATIONS

Oral presentations will be allocated a period of **15 minutes per presentation plus 5 minutes of discussion**. If further discussions are needed, these will take place in Session 4.

Overhead and data projectors, a laptop with Powerpoint, and microphone for speakers will be available at the venue. **Presentations in power point must be provided to the workshop organiser between 8:00 and 8:30 am of the day of the presentation.** Technical support will be provided on site. For special technical needs please get in touch with the Contact person (see below) at least one day before the beginning of the workshop.

### PUBLICATION OF WORKSHOP PROCEEDINGS

All the submitted abstracts and the final discussion and recommendations coming out from Session 4 will be published by FAO and will be available on SWALIM web-site.

Please check the workshop website for updates, under *News & Announcement* at <http://www.faoswalim.org/>

## IMPORTANT DEADLINES

Workshop 's dates

12<sup>th</sup> and 13<sup>th</sup> June 2007

Paper submission

End of July

## VENUE

The workshop's venue is the **Holiday Inn Nairobi** (Westlands, **Nairobi, Kenya**), located in Parklands Road, Westlands, Nairobi. Front Desk: +254-20-3740920, Fax: +254-20-3748823

The conference rooms where the Workshop will take place are: Royal and Coconut rooms. Boards indicating *FAO SWALIM Workshop* will be displayed at the venue.

Coffee breaks and lunches will be served at the venue. The conference rooms are no smoking environment.

## TRAVEL

Nairobi is served by direct daily flights from many African, European and Middle and Far East capitals. Further information on flights servicing Jomo Kenyatta International Airport (JKIA) can be found on: <http://www.kenyaairports.com/jkia/IndexJkia.php>

To reach the workshop venue from JKIA, join the Nairobi-Mombasa road towards Nairobi city centre and proceed on Uhuru Highway towards Westlands. At the Westlands roundabout, turn right onto Ring Road and proceed straight. At the next roundabout, turn right onto Parklands Road. The Holiday Inn is situated on your left along Parklands Road, and is well indicated.

For international participants the Hotel is very well known by taxi drivers.

## ACCOMMODATION

The Holiday Inn Nairobi is the workshop venue, and offers top-level accommodation. For booking and reservations please refer directly to [www.holiday-inn.com/nairobikenya](http://www.holiday-inn.com/nairobikenya). Another option can be an hotel within 5 minutes driving or 15 minutes walking distance from the workshop venue (Jacaranda-Landmark Hotel). Nairobi offers a wide range of different accommodation possibilities. Please contact your local travel agencies or visit

<http://www.magickkenya.com/dir.nsf/propertylistings?openview&restricttcategory=702&l=1&rname=nairob> i for a comprehensive list of available accommodation.

## CLIMATE

*Seasonal forecast for the June-July-August 2007 period by Kenya Meteorological Department website*  
(<http://www.meteo.go.ke/>)

Nairobi is situated at a high altitude, between 1600 and 1800 m a.s.l.

The June-July-August (JJA) season is generally cool and dry over much of Kenya except in the Western parts of the country, some areas in the Rift Valley and the Coastal strip which experience significant rainfall

The Nairobi Province is expected to experience cool and cloudy conditions with occasional drizzle or light rains. Prolonged hours of overcast skies (cloudy conditions) are likely to result into occasional extremely cold and chilly conditions during some days. In general, however, the temperatures are expected to be warmer than normal in these areas. The average minimum temperatures that are observed in the Central Highlands and Nairobi area in JJA are 11°-13°C while the maximum temperatures range between 20° and 23 °C.

## **ORGANISING INSTITUTIONS**

**FAO SWALIM** – Somali Water & Land Information Management of the Food and Agriculture Organization

**JRC** – EC Joint Research Centre

## **SCIENTIFIC AND ORGANISING COMMITTEE**

Dr. Zoltan Balint (CTA, FAO SWALIM Project, Nairobi, Kenya)

Mr. Ronald Vargas (FAO SWALIM Project, Nairobi, Kenya)

Mr. Olivier Leo (AGRIFISH Unit, IPSC, DG JRC of the European Commission, Ispra, Italy)

Prof. Dr. Petri Pellikka (Dept. of Geography, University of Helsinki, Finland)

Dr. Paolo Paron (FAO SWALIM Project, Nairobi, Kenya)

## **CONTACT PERSONS**

For information regarding the Workshop organization, submission of abstracts, proceeding volume and any other queries, please contact:

Paolo Paron (FAO SWALIM Project)

email: [pparon@faoswalim.org](mailto:pparon@faoswalim.org)

Telephone: +254 (0)20 3743486/54/64

Fax: +254 (0)20 3743498

## DETAILED FINAL PROGRAMME

### SESSION 1 - CHAIR: Dr. Wilber Ottichilo (RCMRD)

N	Surname, Name	Institution	location	Title of presentation	Other Authors
1	Clæssens, Lieven	CGIAR - CIP	Nairobi	Using high resolution satellite imagery to improve sweet potato crop statistics in Uganda.	Zorogastúa P., Quiroz R., Potts M. & Namanda S.
2	Gicheha, R.W.	RCMRD	Nairobi	Land use/cover Mapping and Boundary Delineation of Plantations and Indigenous Forests in Mount Kenya	Ottichilo Wilber , Farah H. O.
3	Jones, Arwyn	JRC	Ispira, Italy	Mapping the soil of Africa: new initiatives and preserving data resources	Montanarella Luca, Spaargaren Otto, Nachtergaele Freddy, Thiombiano Lamourdia & Zougmore Robert
4	Khamala, Erik	RCMRD	Nairobi	Towards poverty, conflict and insecurity alleviation: Mapping Gum Arabic and Aloe in Karamoja Region, Uganda	
5	Mayaka, Edward	University of Nairobi	Nairobi	Use of ontology web language in remote sensing applications	
6	Paron, Paolo	SWALIM	Nairobi	Landform mapping for environmental applications: integration of visual image interpretation and digital terrain analysis.	Vargas Rojas Ronald
7	Vargas Rojas, Ronald	SWALIM	Nairobi	The use of Remote Sensing for soil mapping: a review	Omuto Christian
8	Watson, R. Murray	RMR	Vientiane, Lao	The Evolution of Aerial Strip Sampling into the Digital Era: Adaptations over 40 Years and Contemporary Relevance to the Horn of Africa, and in particular to Somalia.	Nimmo J.M., Crees P.D.
9	Wilson, Mick	UNEP	Nairobi	Open web services and SDIs	

### SESSION 2 - CHAIR: Mr. John Latham (FAO)

N	Surname, Name	Institution	location	Title of presentation	Other Authors
1	Brink, Andreas	JRC	Ispira, Italy	Monitoring Land Cover Dynamics in Sub-Saharan Africa	Eva Hugh, Simonetti Dario, Bartholomé Etienne, Mayaux Philippe
2	Mwangudza, Anthony	ASI	Rome & Malindi	The Broglia Space Centre's Contribution of Remotely Sensed Data for Environmental Change Monitoring in the Horn of Africa Region. Institutional partnership and Challenges in Data Acquisition and Distribution.	Castronuovo Marco, Mwinga Juma, Nguli Michael, Kirugara David, Ndugu Jane , Anangwe Byron
3	Cherogony, Reginald	Hornrelief	Nairobi	Rehabilitation of Rangeland; making use of Remote sensing techniques: A Case of Eastern Sanaag Region, Northern Somalia.	Abdirizak Isse
4	Galu, Gideon	FEWSNET	Nairobi	Case-Study: Use of satellite remotely sensed data integrated with the livelihood baseline information in support of food security monitoring and early warning activities in the Sool & Nugaal pastoral region of Somalia.	Aw-Dahir Mohamed
5	Gilbert, Ouma	IGAD-ICPAC	Nairobi	The use of Remote Sensing information as proxy of weather and climate in the Greater horn of Africa.	
6	Hoepffner, Nicolas	JRC	Ispira, Italy	The African Marine Information System: a tool for ecosystem management in coastal waters	Clerici Marco, and Djavidnia Samuel
7	Oduori, Simon Mumuli	SWALIM	Nairobi	The Use of Remote Sensing in Land Cover Mapping, Change and Impact Detection in Somalia	Vargas Rojas Ronald , Oroda Ambrose and Omuto Christian
8	Nyabenge, Meshack	ICRAF	Nairobi	The Key Challenges in Application of GIS and Remote Sensing in Environmental Variables Change Analysis in the Horn of Africa Region. Are we capturing the right indicators of change?	Wayumba G, Inima A, Omuto C.T
9	Oroda, Ambrose	SWALIM	Nairobi	Application of Remote Sensing in the assessment of Pastoral Resources: Assessing droughts in Somalia	Vargas Roja Ronald, Oduori Simon, and Omuto Christian

Please check the workshop website for updates, under *News & Announcement* at <http://www.faoswalim.org/>

10	Watson, S.P.	RMR	Vientiane, Lao	Monitoring Vegetation Change in Somalia by Fixed Plots: Opportunities Offered by New Methods in Remote Sensing.	Watson R.M., Nimmo J.M., Watson A.
----	--------------	-----	-------------------	---	---------------------------------------

### SESSION 3 - CHAIR: Mr. Olivier Leo (JRC)

N	Surname, Name	Institution	location	Title of presentation	Other Authors
1	Arabu, Evans	Univ of Nairobi	Nairobi	Estimation of soil erosion using GIS: a case study of Taita Hills.	
2	Farah, Hussein O.	RCMRD	Nairobi	The use of satellite remote for estimating regional evaporation	Ottichilo Wilber
3	Gadain, Hussein	SWALIM	Nairobi	Impacts of land cover and land use changes on stream flow; a case study from the Nile Basin	Mutie Simon, Guleid Artan
4	Gidyew, Taye	CGIAR - ILRI	Addis Abbaba	Land degradation and Change detection of biophysical products in different land use types Using Multi Temporal SPOT NDVI Image Data: a Case in Blue Nile River Basin, ETHIOPIA	
5	Korme, Tesfaye	RCMRD	Nairobi	Mapping of groundwater vulnerability to pollution using modified DRASTIC modeling: The case of Naivasha- Nakuru basin, Kenyan Rift	Ottichilo Wilber, Barongo Justus and Alamirew Demis
6	Leo, Olivier	JRC	Ispra, Italy	Crop monitoring for Food Security – Contribution of Remote-Sensing and challenges for the future	
7	Maina, Joseph	ITC	Enschede, Holland	Modelling Ecological Susceptibility of Coral Reefs to Environmental Stress Using Remote Sensing, GIS, and in situ Observations: A case study in the Western Indian Ocean	
8	Odhiambo, J.O	University of Nairobi	Nairobi	Predicting and mapping biomass using remote sensing and GIS techniques: a case study of sugarcane	Wayumba G., Inima A. and Omuto C.
9	von Hagen, Craig	SWALIM / GLCN	Nairobi	Processing of MODIS NDVI imagery to characterize Vegetation Dynamics of Africover polygons (VeDAS)	

### WORKSHOP WEBSITE

Please check under the *News & Announcement* section of the main webpage of SWALIM:

<http://www.faoswalim.org>

Please check the workshop website for updates, under *News & Announcement* at <http://www.faoswalim.org>